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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,382	12/21/2001	Walter Callen	DIVER1350-4	4407

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EXAMINER

HUTSON, RICHARD G

ART UNIT	PAPER NUMBER
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1652

DATE MAILED: 05/14/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,382

Applicant(s)

CALLEN ET AL.

Examiner

Richard G Hutson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 57.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-8 are at issue and are present for examination.

Election/Restrictions

Applicant's election with traverse of Group I, Claims 1-5 in Paper No. 8 is acknowledged. With respect to groups I and II, the traversal is on the ground(s) that a search related to a computer readable medium having either the disclosed nucleotide sequence or the disclosed amino acid sequence would not place an undue burden on the office, as the search would involve only two sequences. Applicants further traverse on the basis that the inventions are drawn to a computer readable medium having stored thereon the disclosed nucleotide or amino acid sequence and not to the sequences *per se*. Applicants argument with respect to groups I and II is persuasive and the restriction between the subject matter of these two groups is hereby withdrawn.

With respect to groups III and IV, the traversal is on the ground(s) that the claimed methods for Groups III and IV comprise similar steps and produce similar results, with the difference being that in the first group the sequence is the disclosed nucleic acid and in the second group it is the disclosed amino acid. Applicants argument is not found persuasive because while the groups III and IV do comprise similar steps and produce similar results, the different groups still comprise different steps and produce different results and the searches necessary for each of the groups while overlapping are not coextensive.

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With respect to groups I and II and Groups III and IV, the traversal is on the ground(s) that in contrast to the comments made in the previous office action supporting the restriction requirement, the processes of Groups III and IV cannot be practiced in ones mind without the use of the computer readable mediums of Groups I and II as claims 6-8 require that the claimed method include reading the first sequence and the reference sequence through the use of a computer program that compares sequences. Applicants comments are acknowledged however applicants argument is not found persuasive because applicants are reminded that as previously stated the inventions can be shown to be distinct if **either or both** of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). Also previously stated, in the instant **case the computer readable mediums of groups I and II can each be used to perform other processes such as that of sequence data storage** and the process of inventions III and IV can each be practiced in ones mind without the use of the computer readable mediums of groups I and II.

The requirement is still deemed proper and is therefore made FINAL.

Claims 6-8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed in Paper No. 8.

Priority

Applicants statement on the first line of the specification reciting that this application is a divisional of co-pending U.S. Patent Application Serial Number 09/656,309, filed September 6, 2000, which is a continuation-in-part application of co-pending U.S. Patent Application Serial Number 09/391,340, filed September 7, 1999, which is a divisional of U.S. Patent Application Serial No. 08/907,166, filed August 6, 1997, now issued as U.S. Patent No. 5,948,666 is acknowledged. It is noted that U.S. Patent Application Serial Number 09/391,340, has issued as U.S. Patent Number 6,492,511 B2 and it is suggested that the priority information be updated to reflect this.

It is noted that priority for the invention currently being claimed (i.e. a computer readable medium and a computer system) is granted to the previous parent application, 09/656,309, filed September 6, 2000, only.

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper."

Applicants filing of information disclosures, Paper No. 5, filed 10/1/2002, and Paper No. 7, filed 2/5/2003, is acknowledged. Those references considered have been initialed.

Specification

The disclosure is objected to because of the following informalities:

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth: The application does not contain a complete paper copy of the sequence listing as required. Applicants comments associated with the "Permission to use Sequence Listing" filed with the application are acknowledged. While somewhat confusing in that applicants appear to say the application lacks a paper copy of the sequence listing, and then applicants say that a paper copy is included, regardless a paper copy of the sequence listing could not be found in the application.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non statutory subject matter.

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When nonfunctional descriptive material (i.e. nucleic acid or amino acid sequence) is recorded on some computer-readable medium, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. See M.P.E.P. Section 2106.

Claims to computer-related inventions that are clearly nonstatutory fall into the same general categories as nonstatutory claims in other arts, namely natural phenomena such as magnetism, and abstract ideas or laws of nature which constitute "descriptive material." Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions."

Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se. *Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759. When nonfunctional descriptive material is recorded on some computer-readable medium, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make it statutory. Descriptive material that cannot exhibit any functional interrelationship with the way in which computing processes are performed does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. 101. Thus, Office

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personnel should consider the claimed invention as a whole to determine whether the necessary functional interrelationship is provided. Where certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, are merely stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer, then such descriptive material alone does not impart functionality either to the data as so structured, or to the computer. Such "descriptive material" is not a process, machine, manufacture or composition of matter. (Data consists of facts, which become information when they are seen in context and convey meaning to people. Computers process data without any understanding of what that data represents. Computer Dictionary 210 (Microsoft Press, 2d ed. 1994).) The policy that precludes the patenting of nonfunctional descriptive material would be easily frustrated if the same descriptive material could be patented when claimed as an article of manufacture. For example, music is commonly sold to consumers in the format of a compact disc. In such cases, the known compact disc acts as nothing more than a carrier for nonfunctional descriptive material. The purely nonfunctional descriptive material cannot alone provide the practical application for the manufacture.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Gelfand et al. (NCBI Database Accession Number I17570, 10/7/1996).

Gelfand et al. teach a purified thermostable nucleic acid polymerase and DNA coding sequences from *Pyrodictium* species. Gelfand et al. specifically teach a nucleic acid from *P. occultum* (SEQ ID NO: 3) which is substantially identical to instantly disclosed SEQ ID NO: 1, as “substantially identical” is defined in the instant disclosure as two or more nucleic acid sequences that have at least 60% nucleotide identity (See page 14, lines 17-24 of specification) and SEQ ID NO: 3 disclosed by Gelfand is 66.5% identical to instantly disclosed SEQ ID NO: 1.

Thus, as the sequence taught by Gelfand et al. was entered into the NCBI database by way of a computer readable medium and the database itself comprises a computer readable medium(s) as well a computer system(s) comprising a data storage device and sequence comparison algorithms, which indicates polymorphisms, Gelfand et al. anticipates claims 1-5, drawn to a computer readable medium or a computer system having stored thereon a nucleic acid sequence as set forth in SEQ ID NO: 1 and sequences substantially identical thereto, wherein said computer system comprises a sequence comparison algorithm which indicates polymorphisms.

Remarks

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard G Hutson whose telephone number is (703) 308-0066. The examiner can normally be reached on 7:30 am to 4:00 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (703) 308-3804. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



Richard G Hutson, Ph.D.
Primary Examiner
Art Unit 1652

Rgh
May 12, 2003